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NOTES ON GEOGRAPHIC DISTRIBUTION

Bivalvia, Veneroidea, Corbiculidae, *Corbicula largillierti* (Philippi, 1844): New distribution record in the Del Valle Central basin, Catamarca Province, Argentina

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ABSTRACT: *Corbicula largillierti* (Philippi 1844), an invasive freshwater bivalve, accidentally reached Argentina from Asia presumably in the 1960s. Since then, records of its presence from the Rio de la Plata River to the northeast and northwest Argentinian freshwater systems have been documented. A new record in Del Valle River, part of the Del Valle Central basin in Catamarca Province of northwest Argentina, makes evident that the species is still spreading through Argentina.

Asiatic corbiculids began their expansion in the early twentieth century into South America (Ituarte 1994; McMahon 2000). In Argentinian freshwater systems, *Corbicula largillierti* (Philippi 1844) was introduced in the la Plata river during the last 1960s decade (Ituarte 1994). The distribution of the genus *Corbicula* has been compiled by Rumi *et al.* (2008), who reported *C. largillierti*, based upon a few specimens collected at the Collagasta Dam at Los Altos, Catamarca, Argentina (Figure 1).

Like many other invasive species, *Corbicula largillierti* could potentially cause economic, and even more significantly, ecological damages (Mack *et al.* 2000; Penchaszadeh *et al.* 2005). In the case of *C. largillierti,* it is supposed that its major effect is related to the reduction, displacement and replacement of the native competitors (Darrigan 1992a). In this paper, the presence of *C. largillierti* is recorded for the first time in Del Valle River at La Puerta (28°11'13.39"S, 65°46'43.15"W) in Catamarca Province, northwest Argentina (Figure 1). This river belongs to Del Valle Central basin that occupies an extensive area (5.315 km^2) and is not a part of Del Este basin (ETISIG 2012) where *C. largillierti* was previously reported (Rumi *et al*. 2008).

Fifty individuals of *C. largillierti* were manually collected from the river shore (0-50 cm depth) and transported alive to the laboratory, where they were maintained in aquaria for morphological and morphometric studies. The bottom of the Del Valle River is composed of t two different materials: sand or mud. *C. largillierti* was found in sandy bottoms, being absent in the muddy areas. No special permits where needed to collect the specimens in this area. The identification of the specimens as *C. largillierti* is supported by the morphology, the olive green-brownish outer surface and the purple or violet inner surface of the shells, the presence of concentric and low ribs, flat umbo, posterior region without rostrum and absence of sinus on pallial line (Figure 2). These shell characteristic coincide with previous descriptions for specimens obtained from high energy habitats (Ituarte 1994). Length/height (L/H) and length/width (L/W) ratios were calculated for 38 specimens. Twelve specimens where deposited in the malacological collection at La Plata Museum (MLP 13450). The shell morphometry results are the following (in mm): Shell length range: 6.96-19.57 (mean 12.31 ± 3.29), shell width range: 3.23-10.1 (mean 6.25 ± 1.94) and shell height range 5.84-17.17 (mean 10.55 ± 3.04). Morphometric ratios of populations of *C. largillierti* and other corbiculids are influenced by environmental factors as substrate

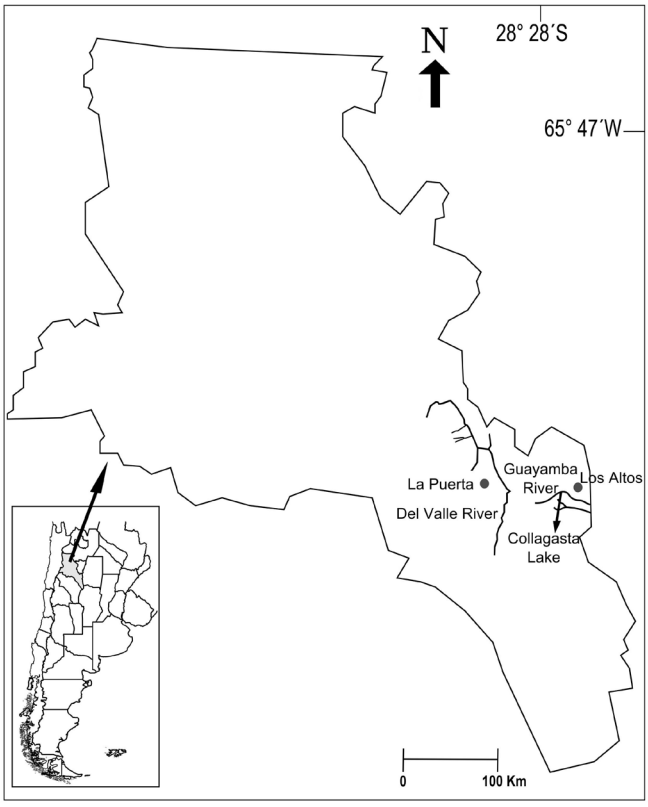

FIGURE 1. Map of Catamarca Province, Argentina. Locations where Corbicula largillierti was previously reported and sampling site of the new record are highlighted. Hydrographical data were obtained from ETISIG (2012).

composition and habitat hydrodynamics (Ituarte 1994). In this case morphometric measurements were coincident with populations inhabiting the sandy intertidal at the Rio de la Plata River, being L/H mean 1.17 ± 0.03 and L/W mean 2.00 ± 0.11.

Ituarte (1981) stated that in fact, this species prefers to inhabit sandy rather than muddy areas, where most native Argentinean bivalves usually are (see Ituarte 1981 in Darrigan 1992b). Nevertheless, Darrigan (1992a) found that this species also inhabits muddy bottoms. It is probable that upon arriving to a new ecosystem, *C. largillierti* prefers sandy bottoms until population starts to grow and interspecific competition becomes strong enough to displace some individuals to the muddy habitats. Considering the distribution of *C. largillierti* in muddy bottoms only in the Del Valle River, it may be that the colonization processes in the area is probably very recent. Considering the absence of *C. largillierti* in muddy bottoms of the Del Valle River, it may be that the colonization processes in the area is probably very recent

If this is the case, freshwater systems of northwest Argentina offer a great opportunity to study the dynamics of colonization and invasion of these corbiculids from their earliest stages.

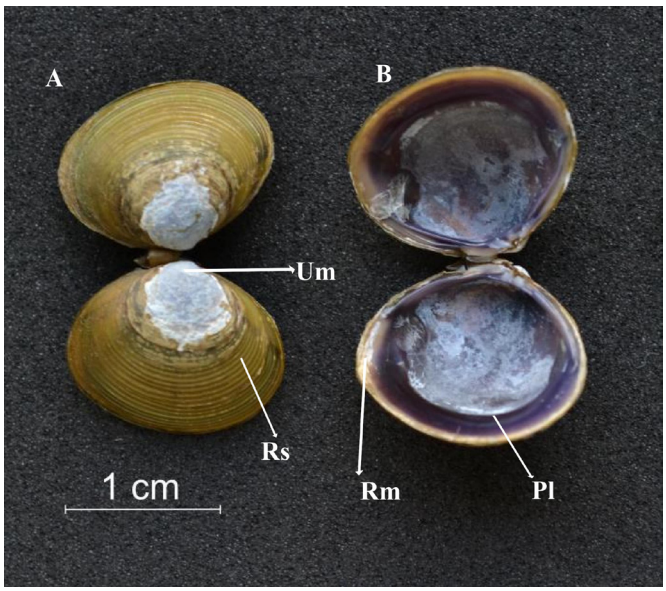

Figure 2. Specimens of *Corbicula largillierti* from Del Valle River in the locality of La Puerta (28°11'13.39" S, 65°46'43.15" W) Umbo (Um) and surface ribs (Rs) are marked in the external view (A). Rostrum area (Rm) and Pallial line (Pl) are indicated on the inner view (B).

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